

WHAT IS CLAIMED IS:

1 1. A method of modifying a source code portion
2 associated with a computer program, comprising the steps of:
3 scanning said source code portion using a parser
4 to recognize at least one select syntax structure therein,
5 said parser having a predetermined code modification portion;
6 and

7 inserting an instrumentation code portion into said
8 source code portion at a location associated with said select
9 syntax structure based on said predetermined code
10 modification portion of said parser.

1 2. The method of modifying a source code portion
2 associated with a computer program as set forth in claim 1,
3 wherein said parser comprises a recursive-descent C language
4 parser, and further wherein said computer program is a C
5 language program selected from the group consisting of an
6 operating system kernel, an application program and a
7 software utility program.

1 3. The method of modifying a source code portion
2 associated with a computer program as set forth in claim 2,
3 further comprising the step of pre-processing said source
4 code portion.

1 4. The method of modifying a source code portion
2 associated with a computer program as set forth in claim 3,
3 wherein said pre-processing step is operable to remove macro
4 code portions from said source code portion.

1 5. The method of modifying a source code portion
2 associated with a computer program as set forth in claim 2,
3 wherein said operating system kernel comprises HP-UX
4 Operating System kernel.

1 6. The method of modifying a source code portion
2 associated with a computer program as set forth in claim 2,
3 wherein said instrumentation code portion is operable to
4 count accesses to a particular global variable of said
5 computer program.

1 7. The method of modifying a source code portion
2 associated with a computer program as set forth in claim 2,
3 wherein said instrumentation code portion is operable to
4 count accesses to a particular function subroutine of said
5 computer program.

1 8. The method of modifying a source code portion
2 associated with a computer program as set forth in claim 2,
3 wherein said instrumentation code portion is operable to
4 count accesses to a particular global variable from a select
5 module of said computer program.

1 9. The method of modifying a source code portion
2 associated with a computer program as set forth in claim 2,
3 wherein said instrumentation code portion is operable to
4 monitor frequency of function calls from a plurality of
5 select locations in said computer program.

1 10. The method of modifying a source code portion
2 associated with a computer program as set forth in claim 2,
3 wherein said instrumentation code portion is operable to
4 monitor frequency of use of a plurality of code paths in said
5 computer program.

1 11. The method of modifying a source code portion
2 associated with a computer program as set forth in claim 2,
3 wherein said operating system kernel is operable with a
4 multiprocessor computer system.

1 12. A system for modifying a source code portion
2 associated with a computer program, comprising:

3 parser means for scanning said source code portion
4 to recognize at least one select syntax structure therein;
5 and

6 means for automatically and selectively inserting
7 an instrumentation code portion into said source code portion
8 at a location associated with said select syntax structure
9 based on a predetermined code modification portion provided
10 with said parser means.

1 13. The system for modifying a source code portion
2 associated with a computer program as set forth in claim 12,
3 wherein said parser means comprises a recursive-descent C
4 language parser, and further wherein said computer program
5 is a C language program selected from the group consisting
6 of an operating system kernel, an application program and a
7 software utility program.

1 14. The system for modifying a source code portion
2 associated with a computer program as set forth in claim 13,
3 further comprising a pre-processor for removing macro code
4 portions associated with said source code portion.

1 15. The system for modifying a source code portion
2 associated with a computer program as set forth in claim 13,
3 wherein said instrumentation code portion is operable to
4 count accesses to a particular global variable of said
5 computer program.

1 16. The system for modifying a source code portion
2 associated with a computer program as set forth in claim 13,
3 wherein said instrumentation code portion is operable to
4 count accesses to a particular function subroutine of said
5 computer program.

1 17. The system for modifying a source code portion
2 associated with a computer program as set forth in claim 13,
3 wherein said instrumentation code portion is operable to
4 count accesses to a particular global variable from a select
5 module of said computer program.

1 18. The system for modifying a source code portion
2 associated with a computer program as set forth in claim 13,
3 wherein said instrumentation code portion is operable to
4 monitor frequency of function calls from a plurality of
5 select locations in said computer program.

1 19. The system for modifying a source code portion
2 associated with a computer program as set forth in claim 13,
3 wherein said instrumentation code portion is operable to
4 monitor frequency of use of a plurality of code paths in said
5 computer program.

1 20. The system for modifying a source code portion
2 associated with a computer program as set forth in claim 13,
3 wherein said operating system kernel is operable with a
4 multiprocessor computer system.

1 21. A computer-readable medium operable with a
2 processing environment, said computer-readable medium
3 carrying a sequence of instructions which, when executed in
4 said processing environment, causes said processing
5 environment to perform the steps of:

6 scanning a source code portion of a computer
7 program using a parser to recognize at least one select
8 syntax structure therein, said parser having a predetermined
9 code modification portion; and

10 inserting an instrumentation code portion into said
11 source code portion at a location associated with said select
12 syntax structure based on said predetermined code
13 modification portion of said parser.

1 22. The computer-readable medium operable with a
2 processing environment as set forth in claim 21, wherein said
3 parser comprises a recursive-descent C language parser, and
4 further wherein said computer program is a C language program
5 selected from the group consisting of an operating system
6 kernel, an application program and a software utility
7 program.

1 23. The computer-readable medium operable with a
2 processing environment as set forth in claim 22, wherein said
3 instrumentation code portion is operable to monitor frequency
4 of use of a plurality of code paths in said computer program.

1 24. The computer-readable medium operable with a
2 processing environment as set forth in claim 22, wherein said
3 operating system kernel is operable with a multiprocessor
4 computer system.

1 25. The computer-readable medium operable with a
2 processing environment as set forth in claim 22, wherein said
3 instrumentation code portion is operable to count accesses
4 to a particular global variable of said computer program.

1 26. The computer-readable medium operable with a
2 processing environment as set forth in claim 22, wherein said
3 instrumentation code portion is operable to count accesses
4 to a particular function subroutine of said computer program.

1 27. The computer-readable medium operable with a
2 processing environment as set forth in claim 22, wherein said
3 instrumentation code portion is operable to count accesses
4 to a particular global variable from a select module of said
5 computer program.

1 28. The computer-readable medium operable with a
2 processing environment as set forth in claim 22, wherein said
3 instrumentation code portion is operable to monitor frequency
4 of function calls from a plurality of select locations in
5 said computer program.